

CALFED
BAY-DELTA
PROGRAM

Program Summary

August 2000

CALFED Bay Delta Program Program Summary – August 2000

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Introduction

The San Francisco Bay/Sacramento-San Joaquin Delta Estuary (the Bay-Delta) is a region of critical importance to California. It is the hub of the State's water supply system, and an area of unsurpassed ecological importance for salmon, migratory waterfowl, and a host of other plants and animals. California's growing population has put increasing demands on the Bay-Delta and today it is an area beset by problems. Since 1995, State and Federal agencies with regulatory or management responsibility in the Bay-Delta have been working together to solve the region's problems in a balanced way that offers benefits for all interests. The product of this effort is the CALFED Bay-Delta Program – a comprehensive effort to solve the interrelated problems of the Bay-Delta.

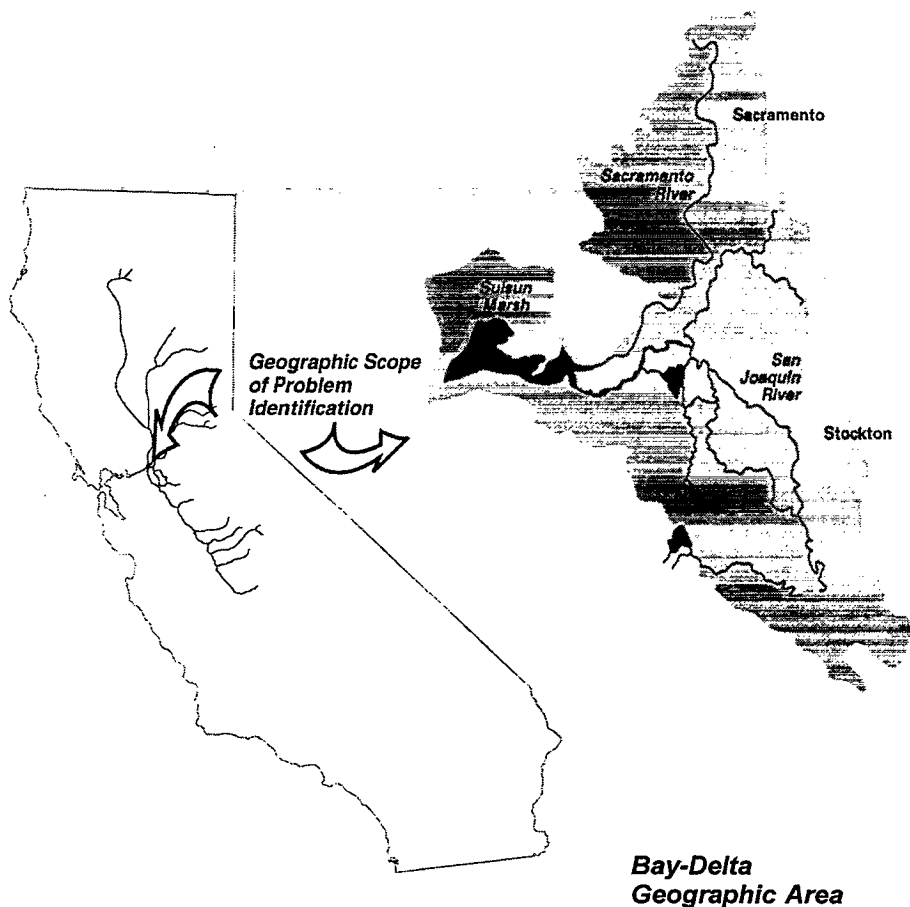
This Program Summary provides a brief background of problems in the Bay-Delta, describes the CALFED Program developed to solve these problems, and outlines future steps that CALFED will take to implement a Bay-Delta solution.

Problems and Solutions

CALFED is working to solve problems that are manifest in the legally defined Delta, Suisun Bay (extending to the Carquinez Strait) and Suisun Marsh.

The geographic area for developing possible solutions includes a

much broader area that extends both upstream and downstream of the Bay-Delta. This solution area includes the Central Bay, near-shore portions of the Pacific Ocean out to the Farallon Islands and north to the Oregon border, and the Trinity River watershed from which flows are diverted into the Bay-Delta system.



Setting

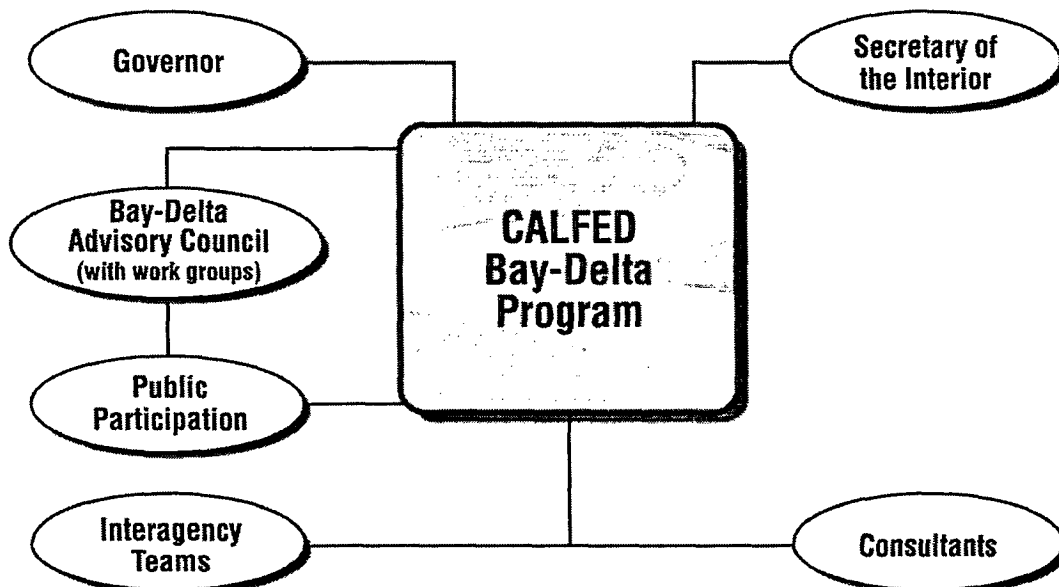
The Bay-Delta is the largest estuary on the West Coast, a haven for plants and wildlife, supporting over 750 plant and animal species. It supplies drinking water for two-thirds of the people in California and irrigation water for over 7 million acres of the most productive agricultural land in the world.

The Bay-Delta is the hub of California's two largest water distribution systems – the **Central Valley Project (CVP)** operated by the U.S. Bureau of Reclamation, and the **State Water Project (SWP)** operated by the California Department of Water Resources. In addition to these two major projects, over 7,000 permitted diverters receive water supplies from the watershed feeding the Bay-Delta estuary. These **diversions**, along with the introduction of **exotic (non-native) species**, water pollution, and numerous other factors have had a serious impact on the fish and wildlife resources of the estuary.

For decades, the Bay-Delta has struggled to meet the competing demands of the environment and water users while maintaining good water quality and a levee system that protects local towns and infrastructure from flooding and contaminating the State's water supply. Today the Bay-Delta is not adequately meeting any of these needs.

The CALFED Process

The CALFED Bay-Delta Program, a cooperative State and Federal effort, was established to reduce conflicts in the system by solving problems in **ecosystem** quality, water quality, water supply reliability, and levee and channel integrity.



In addition to the CALFED agencies, representatives of agriculture, urban areas, environment, fishing, business and rural counties have contributed to the process. The **Bay-Delta Advisory Council (BDAC)**, a federally chartered citizens' advisory committee with over 30 members, provides formal comment and advice to the agencies during regularly scheduled public meetings.

CALFED Agencies

State Agencies

Resources Agency of California*

- Department of Water Resources
- Department of Fish & Game
- Reclamation Board

California Environmental Protection Agency

- State Water Resources Control Board

California Department of Food & Agriculture

Delta Protection Commission

Federal Agencies

U.S. Department of Interior

- Bureau of Reclamation*
- Fish and Wildlife Service*
- Bureau of Land Management
- U.S. Geological Survey

U.S. Army Corps of Engineers*

U.S. Environmental Protection Agency*

U.S. Department of Commerce

- National Marine Fisheries Service*

U.S. Department of Agriculture

- Natural Resources Conservation Service*
- U.S. Forest Service

Western Area Power Administration

Public Involvement

The CALFED Program has maintained a strong commitment to public outreach and involvement. CALFED has included members of the public in the development of every program component, from ecosystem restoration to financing. CALFED has held hundreds of scoping meetings, technical workshops, public information meetings, and public BDAC workgroup meetings. CALFED publishes newsletters and information booklets, and supports a web site and toll-free public information telephone line.

In addition to the many CALFED sponsored general public meetings and stakeholder workshops, 17 formal public hearings on the March 1998 Draft Programmatic

Environmental Impact Statement/Environmental Impact Report (EIS/EIR) were held around the State in April and May 1998. During the formal public comment period, CALFED received over 1,800 comments that included 469 speakers at the hearings. Thousands of post cards and form letters were also received.

The release of the June 1999 Draft Programmatic EIS/EIR was followed by a 90-day public comment period. Sixteen formal public hearings were held in August and September 1999 at which approximately 800 people testified. Almost 1,500 letters and 2,400 postcards were received commenting on the Program. These comments were used to improve the program plans and assist in the development of the Preferred Program Alternative.

CALFED has worked to involve California's diverse multi-cultural communities by producing fact sheets in five languages (Spanish, Chinese, Japanese, Korean and Vietnamese), briefing multi-cultural business, media, social services and agricultural organizations, and placing meeting notices in ethnic media outlets. Increasing awareness and knowledge among the multi-cultural communities is a continued goal of CALFED's public outreach.

The CALFED agencies are committed to fulfilling their responsibilities to consult with the sovereign Native American Indian tribes that will be affected by the Program. Although there are no federally recognized tribes in the Delta, CALFED will actively engage the tribes in the Bay-Delta watershed as specific projects in these areas develop. Formal consultation with tribes will be conducted on a government-to-government basis as future projects are identified that may potentially affect Native American trust assets.

Where to Find Public Outreach Information

- *Program's web site*
(<http://calfed.ca.gov>)
- *Toll-free public information telephone line (1-800-700-5752)*
- *CALFED News and fact sheets*
(available from CALFED Bay-Delta Program, 1416 Ninth Street, Suite 1155, Sacramento, CA 95814; phone 916-657-2666)
- *Public meetings*

CALFED Bay-Delta Program Mission Statement, Objectives and Solution Principles

The mission of the CALFED Bay-Delta Program is to develop a long-term comprehensive plan that will restore ecological health and improve water management for beneficial uses of the Bay-Delta system.

CALFED developed the following objectives for a solution:

- Provide good water quality for all beneficial uses;
- Improve and increase aquatic and terrestrial habitats and improve ecological functions in the Bay-Delta to support sustainable populations of diverse and valuable plant and animal species;
- Reduce the mismatch between Bay-Delta water supplies and current and projected beneficial uses depending on the Bay-Delta system;
- Reduce the risk to land use and associated economic activities, water supply, infrastructure and the ecosystem from catastrophic breaching of Delta levees.

In addition, any CALFED solution must satisfy the following solution principles:

Reduce Conflicts in the System. Solutions will reduce major conflicts among beneficial uses of water.

Be Equitable. Solutions will focus on solving problems in all problem areas. Improvements for some problems will not be made without corresponding improvements for other problems.

Be Affordable. Solutions will be implementable and maintainable within the foreseeable resources of the Program and stakeholders.

Be Durable. Solutions will have political and economic staying power and will sustain the resources they were designed to protect and enhance.

Be Implementable. Solutions will have broad public acceptance and legal feasibility, and will be timely and relatively simple to implement compared with other alternatives.

Have No Significant Redirected Impacts. Solutions will not solve problems in the Bay-Delta system by redirecting significant negative impacts, when viewed in their entirety, within the Bay-Delta or to other regions of California.

The CALFED Bay-Delta Program

For decades, the Bay-Delta has been the focus of competing interests – economic, ecological, urban and agricultural. These conflicting demands have resulted in several resource threats to the Bay-Delta: the decline of wildlife habitat; the threat of extinction of several native plant and animal species; the decline of one of the richest commercial fisheries in the nation; the degradation of Delta water quality; continued land subsidence on **Delta islands**; and a Delta levee system faced with a high risk of failure.

CALFED has identified four basic problem areas: ecosystem quality, water supply reliability, water quality, and levee system integrity. These problems – and their solutions – are interrelated. Single-purpose efforts to solve problems in the past have failed to adequately address the comprehensive nature of the Bay-Delta resources and problems, and the conflicts between supply and demand.

At the simplest level, problems occur when there is conflict over the use of resources from the Bay-Delta system. As water demands increase, California asks more of the system, and there is more conflict. Conflicts in the Bay-Delta system are compounded by California's hydrology. Any consideration of water management in California must recognize the immense variability in the demands for water and the availability of water. The total amount of precipitation and runoff in the Bay-Delta watershed varies widely from month to month and year to year. Even within a month, flow can vary widely. Droughts and floods are part of the "normal" water cycle in California.

The demand for water also varies over time. Agricultural demands tend to be higher than average in dry years because there is less precipitation available and plants need more irrigation. Surface supplies may be limited in dry years, and that imposes further demands on local groundwater and on imported water.

Urban areas can experience similar seasonal variations because of landscaping irrigation. Also, urban areas dependent on the Bay-Delta for drinking water place a significant premium on the quality of the water. In dry years and seasons, increased salinity in the Bay-Delta (from both salt water intrusion and upstream discharges) reduces the usefulness of Bay-Delta water to urban users.

While ecosystem demands are generally more consistent with the natural seasonal flow pattern than urban and agricultural users, historic changes in the system have resulted in circumstances where existing flows are low during times of high ecosystem need.

The CALFED Bay-Delta Program was developed in cooperation with environmental, urban and agricultural interests. The most significant aspect of the CALFED Program is its comprehensive nature. Instead of attempting to solve any single problem, CALFED has started with the recognition that many of the Bay-Delta's resource problems are interrelated, and a successful solution will address multiple problems.

Adaptive management is an essential program concept. No long-term plan for management of a system as complex as the Bay-Delta can predict exactly how the system will respond to Program **actions**. It is necessary to monitor the system continuously and adapt actions that are taken to restore ecological health and improve water management. The Program's objectives will remain fixed over time, but actions can and should be adjusted to assure that the solution is durable.

The CALFED Program will be implemented in stages over the next 30 years or more. Initially, the focus of implementation will be on the first seven years – referred to as Stage 1 – of implementation. Generally, actions carried out during Stage 1 are more straightforward actions for which there is strong scientific understanding and justification. These actions can and should be implemented quickly to achieve early program benefits. Other actions implemented early will be designed to test hypotheses and **conceptual models**. Results will be monitored to determine if the expected results occur. If not, subsequent actions can be modified accordingly. At the same time, additional planning and investigation will take place to refine other proposed actions that involve greater uncertainty, or that will make significant or irreversible modifications to the system.

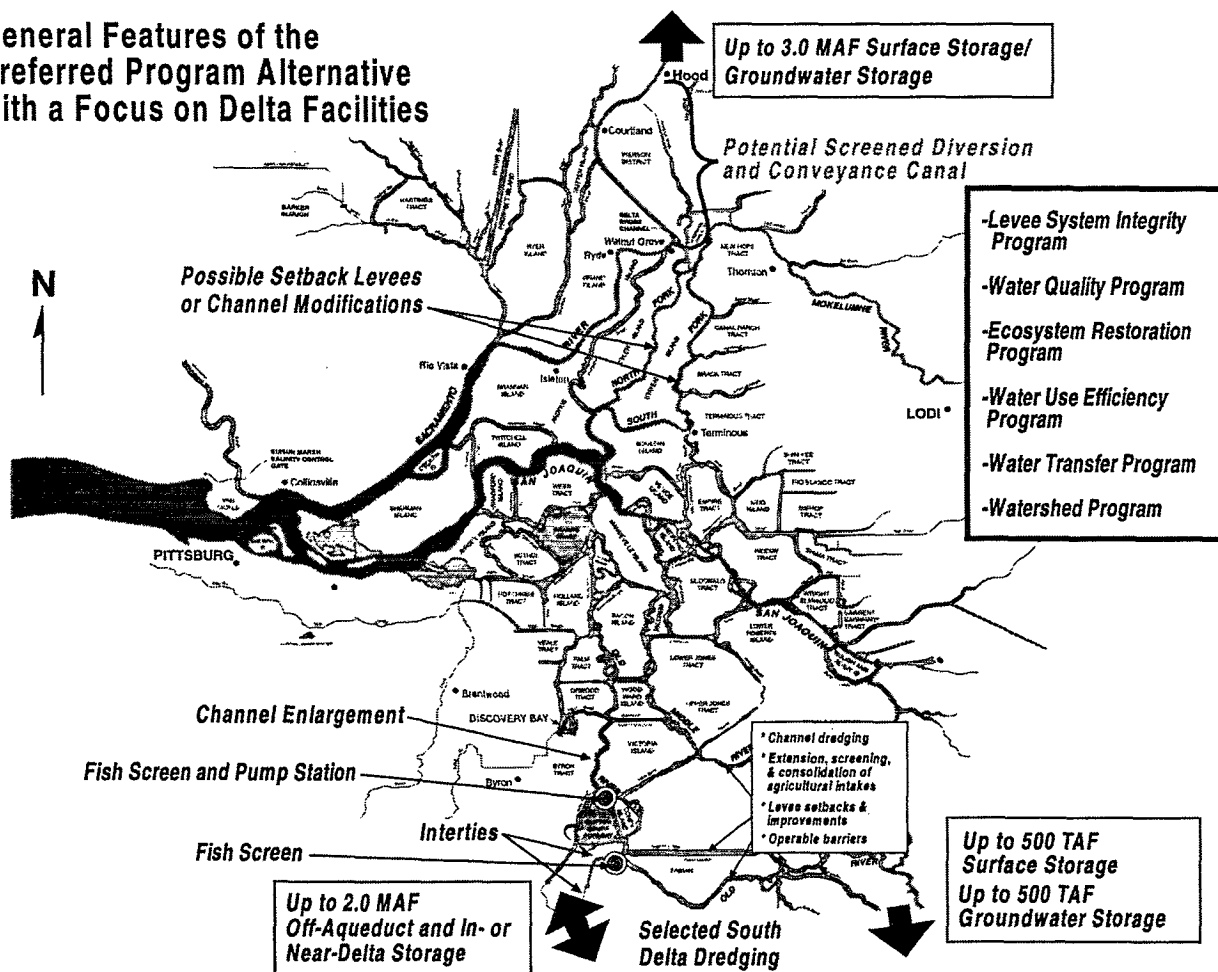
The Preferred Program Alternative

The Final Programmatic EIS/EIR released in July 2000 describes the Preferred Program Alternative (PPA). It is called a "program" or "**programmatic alternative**" because it is very broad in nature and includes hundreds of actions that will be taken throughout the Bay-Delta watershed and beyond over a period of several decades.

The PPA contains a set of programmatic actions, studies and conditional decisions that set the long-term overall direction of the Program. The description of the PPA is programmatic in nature to help agencies and the public make decisions on the broad methods to meet program purposes. The PPA description is an important legal element of compliance with the California Environmental Quality Act (CEQA) and the National Environmental Policy Act (NEPA). The PPA is not intended to define the site-specific actions that will ultimately be implemented.

The PPA is made up of the eight Program Elements: Levee System Integrity Program, Water Quality Program, Ecosystem Restoration Program, Water Use Efficiency Program, Water Transfer Program, Watershed Program, Storage and Conveyance. While each program element can be described individually, actions take place in an integrated framework. Only through coordinated, linked, incremental investigation, analysis, and action can the problems in the Bay-Delta system be effectively resolved.

General Features of the Preferred Program Alternative with a Focus on Delta Facilities



CALFED'S Comprehensive Resource Management Strategy

The CALFED Program begins with strategies for solving each of the four Bay-Delta problem areas in an integrated manner. These strategies are interwoven and they must be viewed in context of each other. For example, to fully implement the ecosystem restoration strategy, CALFED also must have a successful strategy to provide the improved water quality that is needed by the ecosystem. The levee strategy provides new opportunities for improving levee-associated habitat for Delta species. Also, water will be more available for environmental uses due to improved water supply reliability.

Ecosystem Restoration Strategy

CALFED's ecosystem restoration program is the largest, most comprehensive, and most inclusive environmental restoration program in the United States. It provides new perspective to restoration science by focusing on the rehabilitation, protection or restoration of ecological processes that create and maintain habitats needed by fish,

wildlife and plant species dependent on the Delta and its tributary systems. This strategy emphasizes solid science, adaptive management, and local participation - an innovative approach that is becoming a model for similar efforts throughout the nation. By restoring the natural processes that create and maintain diverse and vital habitats, CALFED aims to meet the needs of multiple plant and animal species while reducing the amount of human intervention required to maintain habitats.

Coordination and integration of actions - not only within the CALFED Program, but also among all resource management, conservation and regulatory actions affecting the Bay-Delta system - will be essential to successful restoration.

All actions will contribute in varying degrees to the ecosystem restoration strategy. Ecosystem restoration actions, such as the restoration of habitat in the Delta or along rivers upstream of the Delta, will be central to program success. Other actions will complement or support ecosystem restoration. For example, water use efficiency measures can reduce water demands and diversions from the Bay-Delta system, which will improve streamflow. Transfers of water between two users in the Delta export area may reduce the need to pump water from the Delta. Several Delta **conveyance** actions, including new screens at south Delta water project intakes, will protect fish. Improvements to the Delta levees will reduce the risk of flooding that could destroy lives, property, and Delta wildlife habitats.

Consistent with meeting all program goals, CALFED seeks to preserve as much agricultural land as possible. The government already owns some of the land needed for program implementation, and that land will be used when appropriate. Partnerships with landowners, including easements with willing landowners, will be pursued when appropriate and when suitable government land is not available. Acquisition of fee title to land for ecosystem restoration will be from willing sellers only, and will be used when neither available government land nor partnerships are appropriate or cost-effective for the specific need. Third-party impacts of such actions will be carefully evaluated and taken into consideration.

Water Quality Improvement Strategy

CALFED is committed to achieving continuous water quality improvement for the Bay-Delta estuary with the goal of minimizing ecological, drinking water, and other water quality problems, and to maintaining that quality once achieved. This objective extends to the watersheds of the estuary to the extent that water quality problems in these watersheds affect beneficial uses dependent on the estuary. CALFED's primary water quality improvement strategies are for environmental water quality and drinking water quality.

Although there may be short-term fluctuations in water quality brought about by wet or dry hydrologic conditions or other short-term events, the CALFED objective is a steady or step-wise improvement in water quality over the 30-year implementation .

period of the Program. CALFED's strategy emphasizes voluntary, cooperative, incentive-based source control efforts.

The environmental water quality goal is to provide water in the Bay-Delta system that is of sufficient quality to protect all ecological beneficial uses of the water. Water quality improvement is a key element of the ecosystem restoration strategy. Several water quality components have been found in the Delta at levels that could cause chronic or acute toxicity to aquatic and **terrestrial** organisms.

CALFED has identified several constituents of concern for which individual actions and studies have been proposed. These include: low dissolved oxygen and oxygen-depleting substances, mercury, pesticides, organochlorine compounds, salinity, selenium, trace metals, turbidity and sedimentation.

The CALFED drinking water quality objective is to continuously improve source water quality to allow municipal water suppliers to deliver safe and affordable drinking water that reliably meets and, where feasible, exceeds applicable drinking water standards. The strategy for improving drinking water quality is to reduce the loads and/or impacts of bromide, total organic carbon, pathogens, nutrients, salinity and turbidity through a combination of measures that include source reduction, alternative sources of water, treatment, and storage and conveyance improvements.

CALFED will develop and perform these actions and related studies under the scrutiny of a public advisory group (the Delta Drinking Water Council, comprised of urban water agency, environmental group, business, Delta, and public health agency representatives). Interim milestones will be set to help measure progress toward CALFED's public health protection objectives. The Program's progress towards meeting its drinking water objectives will be reviewed by panels of independent experts in 2003 and 2007. These panels will assess the results of drinking water studies and the continued appropriateness of the water quality targets, and make recommendations on future actions. The results of the panel reviews will be published and will assist CALFED and the State Legislature to determine which additional measures are most appropriate to meet CALFED's public health protection objectives.

Levee System Improvement Strategy

Delta levees are critical to the physical integrity of the Delta and the State's water system. Levees also protect Delta land uses, including agriculture and terrestrial habitat. Given the numerous public benefits protected by Delta levees, the focus of the CALFED strategy is to improve levee integrity. The principal program element to accomplish this is the Long-term Levee Protection Plan.

CALFED has developed a five-part strategy for Delta levees:

- Provide base-level funding to reconstruct all Delta levees to a particular standard. Funding will be distributed to participating local agencies in the Delta.
- Provide funding for targeted special habitat improvement and levee stabilization projects that provide public benefits. Under the special improvement projects, flood protection would be enhanced for key islands that provide statewide benefits to the ecosystem, water supply, water quality, economy and the infrastructure.
- Control subsidence on Delta islands and coordinate research on this topic.
- Prepare emergency management plans so that response to disasters is quick and well coordinated. The emergency management plans will build upon existing State, Federal and local agency emergency management programs.
- Perform risk assessment of all factors that can contribute to levee failure and the consequences of failure to Delta land uses, the ecosystem, water quality and water supply reliability, and implement appropriate risk management strategies considering all available options.

Additionally, CALFED is including the Suisun Marsh levee system in the Levee Program. CALFED is considering two options for marsh levees: inclusion of all the exterior Suisun Marsh levees, or protection of part of the levee system and restoration of some tidal wetlands in the marsh.

CALFED is working to reduce the conflict between protection of wildlife habitat that occurs on levees, and the maintenance of the levees to prevent their failure, seeking areas where these actions can be coordinated. Another area of overlap between the Levee Program and the Ecosystem Restoration Program involves efforts to reduce or reverse subsidence and actions to restore habitat. Both the Delta ecosystem and levee system stability can benefit from reducing land surface subsidence adjacent to levees. The creation of shallow-wetland habitat serves to reduce or reverse subsidence.

Water Management Strategy

The CALFED Program has developed a Water Management Strategy to improve water supply reliability that recognizes the variability of water supply and demand in California. The objective of the Water Management Strategy is to reduce the mismatch between Bay-Delta water supplies and current and projected beneficial uses dependent on the Bay-Delta system.

Goals to achieve this objective are:

- Increase the utility of available water supplies, making water suitable for more uses and reuses. **Water conservation** and **water recycling** increase the utility of water. Improving the quality of water also makes it suitable for more uses.
- Improve access to existing or new water supplies in an economically efficient manner, for environmental, urban and agricultural beneficial uses. A properly regulated **water transfers** market is one way to improve access to existing supplies.
- Improve flexibility of managing water supply and demand in order to reduce conflicts between beneficial uses, improve access to water supplies, and decrease system vulnerability. The ability to shift the timing of Delta diversions is one way to increase flexibility.

CALFED has developed a menu of actions, or water management tools, that can be used to attain these goals. The menu of tools encompasses many of the CALFED program elements. Primary tools include: agricultural, urban and wetland water conservation and water recycling actions in the Water Use Efficiency Program; Water Transfer Program; conveyance, including south Delta improvements; storage; and operational strategies such as real-time diversion management. In addition, the Water Management Strategy will achieve benefits through the Watershed Program, the Water Quality Program, and **real-time monitoring** through the Science Program.

A creative new component of the Water Management Strategy is the **Environmental Water Account (EWA)**. The EWA is based on the belief that flexible management of water will achieve fishery and ecosystem benefits more efficiently than a completely regulatory approach. Through the EWA, environmental managers will control a package of assets, including money, water, and rights to storage and conveyance. With the EWA, decision-makers can react quickly to real-time needs of fish occurrence and vulnerability instead of relying completely on fixed operational requirements based on "typical" fish behavior patterns. The EWA will benefit water users by providing additional water for fish without the need to reduce project deliveries. The EWA managers will be authorized to acquire, bank, transfer and borrow water and arrange for its conveyance. For example, the EWA could modify export pumping to avoid times more harmful for fish species.

Critical to the Water Management Strategy is an Economic Evaluation of Water Management Alternatives (EEWMA) that provides important economic information to help define potential opportunities for implementing water management tools. The initial evaluation explores the relationship between increasing the cost of water, and the resulting reduction in demand for this more expensive water. The EEWMA also describes various actions to increase supply or reduce demand, the cost of these actions, and the amount of water they would produce or save. One general finding from the

EEWMA is that all types of water management tools evaluated could play a role in meeting CALFED's water supply reliability goals.

While the EEWMA will provide guidance on the proper mix of tools and information on the relative effectiveness of these tools, it does not present the complete answer. The economic data must be supplemented by information about opportunities, limitations, and interrelations of the tools – for example, overall operational flexibility, and socioeconomic and environmental impacts. More detailed economic evaluations will continue in Stage 1.

To evaluate the appropriate role of storage in the Water Management Strategy, CALFED has initiated the Integrated Storage Investigation (ISI). Through ISI, existing storage investigations by individual CALFED agencies and CALFED-initiated storage evaluations will be coordinated. The ISI will evaluate the relationship between various types of storage and the utility of storage as part of the Water Management Strategy. The ISI also will analyze the proper mix of groundwater and surface storage facilities, evaluate reoperation of certain hydroelectric power reservoirs, and provide a comprehensive assessment and prioritization of critical fish migration barriers for modification or removal.

Components of the ISI:

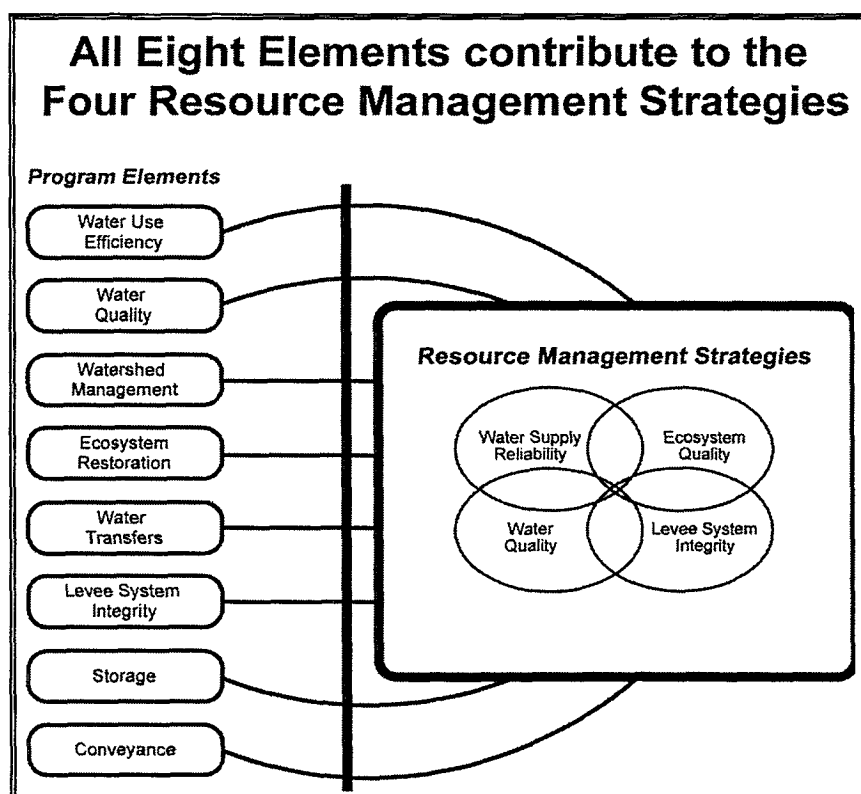
- **Comprehensive Planning** – The ISI will provide information to help CALFED continue to refine and update the Water Management Strategy and evaluate the benefits of specific storage projects for water quality, water supply reliability and the ecosystem.
- **Groundwater/Conjunctive Use** – CALFED has a target goal of implementing locally managed and controlled groundwater and **conjunctive use** projects with a total of 500 thousand acre-feet (TAF) to 1 million acre-feet (MAF) of storage capacity. CALFED supports comprehensive groundwater management by local agencies.
- **Surface Storage Investigations** – CALFED will focus on off-stream reservoir sites for new surface storage, but will consider expansion of existing on-stream reservoirs. CALFED will not pursue storage at new on-stream reservoir sites. During Stage 1, CALFED will focus on the most promising and implementable storage projects with multiple benefits: enlarging Shasta Lake (300 TAF) and Los Vaqueros Reservoir (300-400 TAF), and developing **in-Delta storage** (250 TAF). Studies will continue on two other potential projects, Millerton Lake enlargement and Sites Reservoir, that require substantial technical work, further environmental review, and the development of cost-sharing agreements before decisions to pursue them as part of CALFED are made.
- **Power Facilities Reoperation Evaluation** – After considering the effects of reoperation on downstream users, water quality, environmental resources, power

production and recreation, initial evaluation indicates opportunities are limited. However, benefits for local water supplies or the EWA, as well as additional operational flexibility, could be offered.

- **Fish Migration Barrier Removal Evaluations** – As part of CALFED's Ecosystem Restoration Program, some obstructions to fish passage, such as small dams, are being considered for modification or removal to restore access to critical spawning habitat.

Program Elements

Actions to carry out the resource management strategies are organized into the eight Program Elements. Each of these program elements includes many actions that will solve problems simultaneously in more than one area. CALFED's goals will be met through improvements in all areas. The eight program elements are: Long-Term Levee Protection Plan, Water Quality Program, Ecosystem Restoration Program, Water Use Efficiency Program, Water Transfer Program, Watershed Program, Storage, and Delta Conveyance.



Levee System Integrity Program

The focus of the Levee System Integrity Program is to improve levee stability to benefit all users of Delta water and land. Actions in this program element protect water supply reliability by maintaining levee and channel integrity. Levee actions will be designed to provide simultaneous improvement in habitat quality that will indirectly improve water supply reliability. Levee actions also protect water quality, particularly during low flow conditions when a catastrophic levee breach would draw salty water into the Delta.

Levee protection actions will provide base-level funding to reconstruct all Delta levees to a particular standard. Additional funding will be available for special projects to enhance flood protection for key islands that provide statewide benefits to the ecosystem, water supply, water quality, economics and infrastructure. The Program will also: control subsidence adjacent to levees; develop a risk assessment and management plan; establish an emergency management and response plan; and rehabilitate Suisun Marsh levees.

Water Quality Program

The CALFED Program is committed to achieving continuous improvement in the water quality of the Bay-Delta system for all beneficial uses, and maintaining this quality once it is achieved. Improvements in water quality will result in improved ecosystem health, with indirect improvements in water supply reliability. Improvements in water quality also make water suitable for more uses.

The Water Quality Program will focus on improving drinking water quality by reducing the amounts and/or impacts of bromide, total organic carbon, pathogens, nutrients, salinity and turbidity through a combination of measures that include source reduction, alternative sources of water, treatment, storage and conveyance improvements. The Program also will work to reduce impacts from urban and agricultural pesticide use; trace metals; mercury; selenium; turbidity and sedimentation; salinity; low dissolved oxygen; and toxicity of unknown origin.

Ecosystem Restoration Program

The goal of the Ecosystem Restoration Program (ERP) is to improve and increase aquatic and terrestrial habitats and improve ecological functions in the Bay-Delta system to support sustainable populations of diverse and valuable plant and animal species. Along with the Water Management Strategy, the ERP is also designed to achieve or contribute to the recovery of listed species found in the Bay-Delta. Improvements in ecosystem health will reduce the conflict between environmental water use and other beneficial uses, and allow more flexibility in water management decisions.

Early Ecosystem Restoration

The 1994 Bay-Delta Accord included a commitment to develop and fund non-flow related ecosystem restoration activities to improve the health of the Bay-Delta ecosystem. This is commonly referred to as "Category III." Actions funded under this program are selected for their benefits to the system, regardless of the final configuration of the Preferred Program Alternative. The project selection process includes extensive stakeholder input.

To date, CALFED's ERP has received more than 900 proposals and funded 271 projects for approximately \$250 million. The Program has funded fish screens, fish ladders, land acquisition, habitat restoration, and focused research and monitoring designed to provide information that will improve future restoration efforts. Funding sources have included contributions from the California Urban Water Agencies, State Proposition 204 bond funds, Federal Bay-Delta Act funds, and U.S. EPA watershed funding.

"Single Blueprint" for Ecosystem Restoration

Many agencies and organizations have programs affecting ecosystem and species restoration in the Bay-Delta system. Establishing a "single blueprint" framework for the development and implementation of the ERP is a key ingredient for a successful and effective restoration program. A blueprint ensures coordination and integration among all resource management, conservation and regulatory actions affecting the Bay-Delta system.

The blueprint is a unified and cooperative approach defined by three primary elements:

- *Integrated, shared science and a set of clearly explained ecological conceptual models to provide a common basis of understanding about how the ecosystem works;*
- *A shared vision for a restored ecosystem;*
- *A management framework that defines how parties with management and regulatory authorities affecting the Delta will interact and how management and regulatory decisions will be coordinated and integrated over time.*

The Program emphasizes the restoration of ecological processes in order to restore and maintain the diverse and vital habitats of the multiple plant and animal species in the Bay-Delta system. Implementation will be guided by the adaptive management approach described in CALFED's Strategic Plan for Ecosystem Restoration. Independent scientific review will help guide adaptive management decisions.

Over 600 actions are identified in the ERP for the 30 years of implementation. Representative actions include: restoring, protecting, and managing diverse habitat types representative of the Bay-Delta system and its watershed; acquiring water from sources throughout the watershed to provide flows and habitat conditions for fishery protection and recovery; restoring critical instream flows; improving **Delta outflow** during key springtime periods; reconnecting Bay-Delta tributaries with their floodplains; developing prevention and control programs for invasive (non-native) species; restoring sediment; reducing or eliminating fish passage barriers; and conducting research to provide information needed to define problems and design and prioritize restoration actions.

Water Use Efficiency Program

The Water Use Efficiency Program includes actions to assure efficient use of existing water supplies and any new water supplies developed by the CALFED Program. The Program includes both water conservation and water recycling measures. Efficiency actions can benefit the ecosystem and improve water quality.

The Water Use Efficiency Program will build on the work of the existing Agricultural Water Management Council (AWMC) and California Urban Water Conservation Council (CUWCC), through planning and technical assistance and targeted financial

incentives (both loans and grants). The Program will work with CUWCC and AWMC to identify and implement appropriate, region-specific water conservation measures.

Water conservation and recycling actions include: grant funding for agricultural and urban conservation incentives programs; expanded State and Federal programs for increased planning and technical assistance to local water suppliers; improved water management practices for wildlife areas; and directed studies and research.

Water Transfer Program

The Water Transfer Program proposes a framework of actions, policies and processes that will facilitate water transfers and further develop a statewide water transfer market. The framework also includes mechanisms to provide protection from third-party impacts. Water transfers can improve water availability for all users, including the environment. Transfers can also help to match water demand with water sources of the appropriate quality, thus increasing the utility of water supplies.

Key components of this program include:

- Establish California Water Transfer Information Clearinghouse to provide information about proposed transfers, and perform research and collect data to improve understanding of water transfers and their potential effects.
- Streamline the water transfer approval process now used by State and Federal agencies.
- Require water transfer proposals to include an analysis of potential groundwater, socioeconomic, or cumulative impacts by the proposed transfers.
- Improve accessibility of State and Federal conveyance and storage facilities for the transport of approved water transfers.
- Develop a process to identify transferable water, reservoir refill and carriage water criteria and costs for transporting water through State and Federal conveyance facilities.
- Identify appropriate assistance for groundwater protection programs.
- Establish new accounting, tracking and monitoring methods to aid instream flow transfers under California Water Code Section 1707.

The Watershed Program

The Watershed Program will provide financial and technical assistance to local watershed programs that benefit the Bay-Delta system. Watershed actions can improve water supply reliability, help maintain levee integrity, and improve water quality.

The Watershed Program will also facilitate and improve coordination and assistance among government agencies and other organizations and local watershed groups, support education and outreach at the local level, develop watershed monitoring and assessment protocols relevant to CALFED goals and objectives, and identify the watershed functions and processes that are relevant to the CALFED goals and objectives.

Storage

Surface and groundwater storage can be used to improve water supply reliability, provide water for the environment when it is most needed, provide flows to maintain water quality, and protect levees through coordinated operation with existing flood control reservoirs. Decisions to construct groundwater and surface water storage will be predicated upon complying with all environmental review and permitting requirements and maintaining balanced implementation of all Program elements.

Subject to these conditions, new groundwater and surface water storage will be developed and constructed with aggressive implementation of water conservation, recycling, an improved water transfer market, and habitat restoration, as appropriate to meet CALFED Program goals. During Stage 1, CALFED will continue to evaluate surface water and groundwater storage; identify acceptable site-specific projects; and initiate permitting and construction if all conditions are satisfied.

The total volume of new or expanded surface and groundwater storage under evaluation by CALFED ranges up to 6 million acre-feet, and facility locations being considered are located in the Sacramento and San Joaquin Valleys and in the Delta.

Conveyance

CALFED's preferred program alternative employs a **through-Delta** approach to conveyance. This means continued use of the existing system with modifications and actions designed to achieve CALFED's goals. Modifications of in-Delta conveyance will result in improved water supply reliability, protection and improvement of Delta water quality, improvements in ecosystem health, and reduced risk of supply disruption from catastrophic breaching of Delta levees.

Proposed actions include:

- A new screened intake at Clifton Court Forebay (SWP).

- Construction of either a new screened diversion at Tracy (CVP) and/or an expansion of the new diversion at **Clifton Court Forebay** to meet the **Tracy Pumping Plant** export capacity.
- Implementation of the **Joint Point of Diversion** for the SWP and CVP, and construction of interties between the projects.
- Construction of an operable barrier at the head of **Old River** to improve conditions for salmon migrating down the San Joaquin River.
- Construction of operable barriers taking into account fisheries, water quality and water stage needs in the South Delta.
- Changes to the SWP operating rules to allow export pumping up to the current physical capacity of the SWP export facilities.
- Study and evaluation of a screened diversion structure on the Sacramento River of up to 4,000 cubic feet per second (cfs) as a measure to improve drinking water quality in the event that the Water Quality Program measures do not result in continuous improvements toward CALFED drinking water quality goals.

NOTE: The diversion facility on the Sacramento River is an action to be considered only if evaluation shows that diversion would achieve water quality goals without adversely affecting fish populations. The evaluation would be assessed by both the Delta Drinking Water Council and an expert panel evaluating fish impacts of Delta conveyance.

- Construction of new setback levees, dredging and/or improvement of existing levees along the channels of the lower Mokelumne River downstream to the San Joaquin River.

A process for determining the conditions under which any additional conveyance facilities and/or other water management actions would be taken in the future is included in the Preferred Program Alternative. The process would include:

- An evaluation of how drinking water suppliers can best provide a level of public health protection equivalent to Delta source water quality of 50 parts per billion (ppb) bromide and 3 parts per million (ppm) total organic carbon.
- An evaluation based on the reports of two independent expert panels – one on CALFED's progress towards these measurable water quality goals and the second on CALFED's progress toward ecosystem restoration objectives, with emphasis on fisheries recovery.

Program Implementation

With the Federal Record of Decision (ROD) and State Certification of the Final Programmatic EIS/EIR completed, Phase III of the CALFED Program begins with implementation of the Preferred Program Alternative. Implementation is expected to last 30 years or more. The focus will be on the first seven years, or Stage 1, but also reflects a long-term vision for continuing implementation over the next several decades.

Implementation includes the following items:

- **Stage 1 Actions** - Proposed actions for the first seven years of program implementation.
- **Governance Plan** - Recommended interim and long-term governance structure for CALFED.
- **Financing Plan** - Plan for funding implementation, including financing principles, cost allocation and cost-sharing considerations, and cost estimates.
- **Science Program** - Plan for monitoring and research that provides the data and necessary information to evaluate actions and support the adaptive management of future actions.
- **Adaptive Management** - Plan to use monitoring and research to adjust future implementation as more is learned about the system and how it responds to restoration efforts.

Stage 1 Actions

Stage 1 is defined as the seven-year period commencing with the final decision on the Programmatic EIS/EIR. Agreement on Stage 1 actions is only one part of the decision for a PPA, but it is important that these actions achieve balanced benefits and lay a solid foundation for successful implementation of the Program.

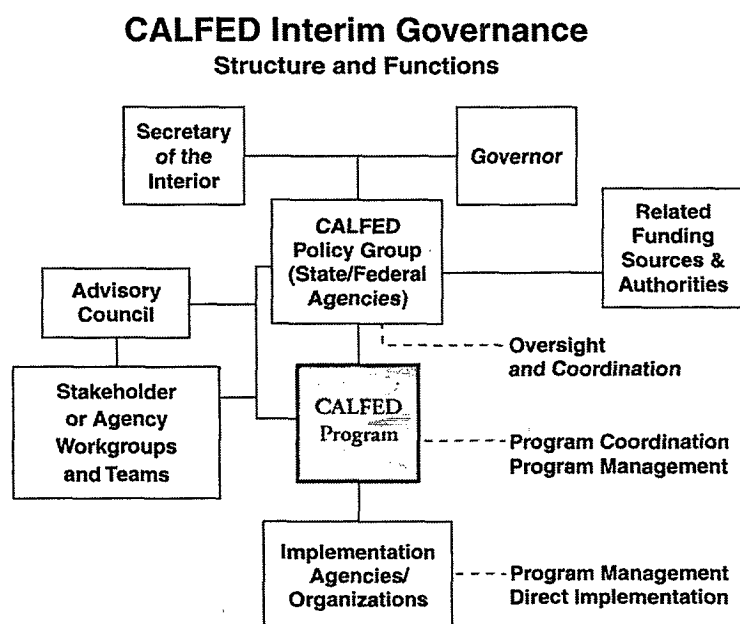
Detail on the list of Stage 1 actions is provided in CALFED's Implementation Plan, one volume of the multi-volume Final Programmatic EIS/EIR. If additional authorizing legislation is needed for any actions, such authorization will be developed and pursued in cooperation with stakeholders. The Stage 1 actions are subject to revision - modification, deletion, or addition - based upon information developed during program implementation; available resources, including funding and personnel; and logistical considerations.

Governance Plan

The decision-making structure for implementation of the CALFED Program is important to assuring successful program implementation. The Federal and State administrations strongly believe that a new joint Federal-State commission must be created through State and Federal legislation to oversee long-term implementation. In the near-term, the CALFED agencies will rely on an interim governance structure similar to the current voluntary structure.

Interim Governance

The CALFED Policy Group will continue to provide Program direction. The Policy Group is made up of State and Federal agencies (as shown on page 3) with support from the CALFED Bay-Delta Program staff.



Interim governance will be guided by an implementation Memorandum of Understanding that the CALFED agencies will develop and execute. It will operate for approximately two to three years until the long-term structure is in place.

In most cases, the State and Federal agencies that currently have program and funding authorities will manage appropriate program actions. While final approvals will rest with the agencies, the

Policy Group will provide recommended approvals to the funding agencies. Review and coordination is critical in the interim to ensure that programs and funding are meeting CALFED objectives.

Public involvement will continue to be essential to the CALFED Program. In the interim, public involvement will be through public advisory groups and public Policy Group meetings. A broad-based public advisory group will be formed to meet jointly with Policy Group and separately as needed. Work groups focused on individual program areas, such as the Drinking Water Council and the Ecosystem Roundtable, will continue to function.

Long-term Governance Proposal

The CALFED agencies support the creation of a new joint Federal-State commission. The commission would be charged with providing program direction and oversight. The agencies propose a 12-member commission, made up of equal numbers of high-level officials of the State and Federal agencies responsible for implementing CALFED programs, and a similar number of high-level stakeholder and tribal representatives.

An advisory committee whose members would include qualified representatives from Indian tribes and stakeholder groups would assist the commission.

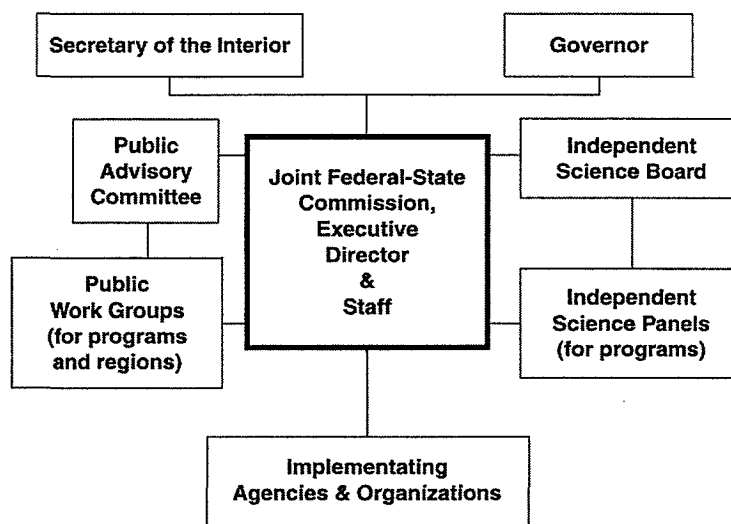
Financing Plan

CALFED's Financing Plan, outlined in the Implementation Plan of the Final Programmatic EIS/EIR, describes the initial framework. The Financing Plan will guide State and Federal discussions on new bonds, new fees, and proposed budget appropriations. The Financing Plan represents a firm commitment to secure funding for all program elements over the life of the CALFED Program.

A fundamental philosophy of the CALFED Program is that the beneficiaries of program actions should pay costs. Besides being an equitable policy, it encourages potential beneficiaries to carefully review their water and power needs and the costs of proposed programs in relation to the benefits they could receive. Such a policy also encourages the examination of a fuller range of alternatives, including locally-funded measures, to assure that public funds are spent in the most cost-effective way to meet program goals.

In the first few years of implementation, large shares of public funding will be needed to move the Program forward. State and Federal funds may be used for program elements with mostly public benefits, as well as for program elements that will likely have multiple benefits. However, it is expected that beneficiaries will reimburse the public and pay for larger shares of the costs in the latter years of Stage 1. For example, public funds may be used for the planning and evaluation of storage projects to ensure a comprehensive and fair comparison of storage options. However, should a storage

CALFED Long-Term Governance Structure



project proceed to construction, then the public funds used for planning and evaluation will be reimbursed by the project beneficiaries.

For those programs whose benefits cannot be easily measured (such as ecosystem, water quality and watershed programs), CALFED will need to identify a procedure or strategy for estimating and allocating costs. These may differ from existing or historical State and Federal cost-sharing formulas.

The Financing Plan compares several different financing mechanisms, all of which have been used to date and are expected to be used in the future, including State and Federal appropriations, State general obligation bonds, State water and power revenue bonds, private financing, user fees and a broad-based Bay-Delta system diversion fee. The user

fee would most likely apply to all major diverters of water from tributaries that flow into the Delta, as well as exporters of Delta water. The crediting of **Central Valley Project Improvement Act** revenues and other contributions to date would be an integral part of implementing any broad-based user fee.

Preliminary Stage 1 cost estimates are approximately \$8.5 billion. These estimates range in precision from specific project costs for conveyance improvements in the South Delta to broad programmatic level estimates of costs for water use efficiency. In addition, because of the programmatic nature of the CALFED plan and the adaptive management approach,

CALFED Stage 1 Projected Expenditures ¹ (\$ in millions)	
Program Area	Total Cost
Ecosystem Restoration ^{2,3}	\$1,326
Water Use Efficiency/Recycling ⁴	\$2,956
Water Transfers ⁵	\$15
Watershed Management	\$300
Environmental Water Quality	\$280
Drinking Water Quality	\$675
Levees ⁶	\$444
Storage ⁴	\$1,425
Conveyance ³	\$747
Science Program ⁸	\$300
TOTAL	\$8,468
Notes: ¹ Preliminary; current year dollars based on staff estimates. Total costs assume contributions from State, Federal, and User/Private funding. ² Funding includes \$50 million per year for the first four years for the Environmental Water Account. ³ Cost estimates differ from Appendix A in "California Water Future: A Framework for Action" (June, 2000) because some actions which were considered complementary to CALFED. ⁴ Actual expenditures will be determined after ongoing evaluation of effectiveness of program investments during the first four years of Stage 1. ⁵ No major capital investments are necessary for this program. ⁶ Total cost includes funding for the Suisun Marsh Levee Program, which provides substantial ecosystem, water quality, and flood control benefits. ⁷ Storage expenditures include funding for groundwater and surfacewater planning and construction. ⁸ Science Program will provide for implementation of adaptive management and more cost-effective decision-making throughout the rest of the Program.	

long-term cost estimates are quite difficult to make. However, the Stage 1 estimates do represent the right order of magnitude of investment that will be necessary to carry out the program successfully.

CALFED Science Program

The CALFED Science Program will provide the new information and scientific interpretations necessary to implement, monitor, and evaluate the success of CALFED Program actions and guide future decision-making. The Science Program will address areas of uncertainty in all CALFED program elements, although some elements, such as the Ecosystem Restoration Program, rely more strongly on adaptive management than others.

The Science Program will build on the work of other State and Federal monitoring and research programs, and information will be available for use by other State, Federal, local and nongovernmental programs in the CALFED solution area. Periodically, the Science Program will undergo independent scientific review.

Regulatory Compliance

The Final Programmatic EIS/EIR outlines specific actions that CALFED will take to comply with all applicable State and Federal regulations.

CALFED has developed a Multi-species Conservation Strategy (MSCS) to assure that the CALFED Program as a whole, and individual CALFED Program actions, will be implemented in compliance with the State and Federal **endangered species acts**. It also identifies goals for species and habitats, and measures to meet these goals.

The MSCS evaluates plant and animal species that occur in the Bay-Delta system and habitat types that are important to them. The MSCS then sets goals that include the recovery of certain species, contributing to the recovery of others, and maintaining populations of other species. Other MSCS goals focus on the restoration and maintenance of important habitats.

Regulatory agencies will use biological information from the MSCS to prepare programmatic biological opinions and assure compliance with the State and Federal endangered species laws. These biological opinions will serve as the springboard for a simplified regulatory compliance process.

In addition, the MSCS provides the framework for commitments to cooperating landowners that they will not be prevented from continuing their existing land uses because of CALFED Program actions or MSCS conservation measures. Cooperating landowner programs will include protections for landowners or public entities near CALFED wildlife conservation areas, those who maintain levees where wildlife habitat

will be created or maintained, or those who use or divert water from streams or rivers newly opened to **anadromous fish** or where **fish screens** will be installed.

Regional Approach

The range of actions proposed by State and Federal agencies related to water management and ecosystem restoration will provide benefits to all Californians. Many of these actions are elements of the CALFED Program. Other actions, such as the Sacramento and San Joaquin River Basins Comprehensive Study, are being undertaken by one or more of the CALFED agencies and are being coordinated with other water management and ecosystem restoration actions.



The CALFED Program has developed a regional approach for implementation. Although each region raises unique ecosystem and water management issues, each region's issues affect the health and function of the Bay-Delta system as a whole. Those regional issues nevertheless need regional solutions that contribute to overcoming the challenges facing the Bay-Delta system.

The following information categorizes proposed actions with benefits for regions across California: Sacramento Valley, Delta, Bay Area, San Joaquin River and South San Joaquin Valley, Westside San Joaquin Valley, and Southern California. All regions of the State will benefit from implementation of the CALFED Program.

Some actions not included in the CALFED Program - complementary actions - will help to achieve CALFED goals and objectives. Complementary actions that were identified in the June 9, 2000 **Framework for Action**, as well as specific implementation

actions, will require additional environmental review. (See page 35 for related agency actions.)

Sacramento Valley and Watershed

Goals

The primary goals for water management and ecosystem restoration in the Sacramento Valley and watershed include:

- Restoring habitat;
- Improving water quality and temperature in the Sacramento River;
- Improving reliability of the water supply for agriculture and urban users.

Strategy

Key measures CALFED agencies will pursue in the Sacramento Valley strategy include:

- Managing surface and groundwater storage conjunctively (potential projects include expanding Lake Shasta, Sites Reservoir, and locally controlled groundwater storage).
- Allowing users more flexibility to switch between surface and groundwater supplies.
- Improving fish passage.
- Providing drought-year supplies.
- Providing greater transfer capacity.
- Restoring degraded salmon/steelhead spawning areas and improving fish access to other areas, working through local partnerships.
- Improving flood management.
- Developing locally-led watershed programs with multiple benefits.
- Improving Riparian Habitat in the Sacramento River and tributaries (establish meander corridor).

NOTE: Actions not analyzed in the programmatic EIS/EIR will require both project-specific and possibly additional programmatic analysis before they can be implemented.

Sacramento Valley Regional Benefits

Principal benefits to the Sacramento Valley region include:

- Improved water supply reliability from conjunctive use, transfers, water use efficiency, potential surface storage.
- Improved flood management from watershed management, levee restoration, potential surface storage, Comprehensive Study.
- Improved water quality from source control, mine remediation, water use efficiency.
- Improved ecosystem health from habitat restoration, fish barrier removal, hatchery management, water management, potential surface storage.
- Responsible water transfers will be facilitated and water supply reliability will benefit through streamlined application process and better information about conveyance opportunities.
- Water transfer application information will help prevent negative third-party impacts.

San Francisco Bay Area

Goals

The primary goals for water management and ecosystem restoration in the San Francisco Bay Area include:

- Enhance Bay Area urban water quality, reliability, and flexibility;
- Restore ecosystem functions and processes that affect the Bay;
- Support improved treatment processes.

Strategy

Key measures CALFED agencies will pursue in the Bay Area strategy include:

- Constructing interties between Bay Area water districts to improve flexibility and allow blending of water supplies of different qualities.
- Providing storage and diversion capacity to capture and manage high-quality source water and to allow export/fishery protection flexibility.
- Restoring upstream ecosystem functions and processes.
- Supporting development of new water treatment technologies.
- Constructing a San Luis Reservoir bypass.

- Enhancing conservation.
- Constructing the initial phase of the Bay Area Regional Water Recycling Program.
- Developing drought contingency plan.

NOTE: Actions not analyzed in the programmatic EIS/EIR will require both project-specific and possibly additional programmatic analysis before they can be implemented.

Bay Area Regional Benefits

Principal benefits to the Bay Area include:

- Improved water supply reliability from transfers, conservation, recycling, interconnections, and potential surface storage.
- Improved operation of the **Delta Cross Channel** and/or construction of a through Delta Sacramento River screened diversion will improve drinking water quality .
- Improved drinking water quality from source control, interconnections, improved water management, intake relocation, San Luis bypass, improved treatment technologies, potential surface storage.
- Improved ecosystem health and fish abundance from upstream actions: habitat restoration, fish barrier removal, hatchery management, water management, source control, mine remediation, potential storage.
- Minimize drought year shortages.

Sacramento-San Joaquin River Delta

Goals

The primary goals for water management and ecosystem restoration in the Sacramento-San Joaquin River Delta include:

- Improve in-Delta water quality;
- Maintain levee stability;
- Preserve Delta agricultural water supply;
- Restore ecosystem health.

Strategy

Key measures CALFED agencies will pursue in the Delta strategy include:

- Implementing South Delta improvements to ensure availability of water of adequate quantity and quality to agricultural diverters within the south Delta while improving flexibility of Delta exports.
- Implementing a comprehensive levee system improvement strategy .
- Protecting and restoring Delta habitat integrated with flood management.

NOTE: Actions not analyzed in the programmatic EIS/EIR will require both project-specific and possibly additional programmatic analysis before they can be implemented.

Delta Regional Benefits

Principal benefits to the Delta include:

- Preservation of the "common pool" concept, assuring good water quality for Delta users.
- A long-term levee strategy that assures continued security for Delta land uses and water quality.
- Improvements in-Delta ecosystem health, implemented with a commitment to give first preference to restoration on public lands or through conservation easements rather than land purchase.

Westside San Joaquin Valley

Goals

Primary goals for water management and ecosystem restoration in the Westside San Joaquin Valley include:

- Improve the reliability of water supply to agriculture/refuges;
- Improve groundwater recharge;
- Resolve/implement agricultural drainage solutions.

Strategy

Key measures CALFED agencies will pursue for the Westside San Joaquin Valley strategy include:

- Reducing demands and resulting drainage.
- Improving access to transfers and exchanges.

- Constructing a San Luis Reservoir bypass.
- Providing reliable water supplies.
- Funding locally controlled **groundwater banking**.
- Funding agriculture water use efficiency.
- Implementing San Joaquin Drainage Program.
- Developing drought contingency plan.

NOTE: Actions not analyzed in the programmatic EIS/EIR will require both project-specific and possibly additional programmatic analysis before they can be implemented.

Westside San Joaquin Valley Benefits

Principal benefits to the Westside San Joaquin Valley include:

- Responsible water transfers will be facilitated and water supply reliability will benefit through streamlined application process and better information about conveyance opportunities.
- Through recovery of endangered species in the Bay-Delta system, water supplies can move more efficiently and reliably through the system.
- Funding and technical assistance to agricultural users to help them implement more efficient water management practices will help these users improve water supply reliability. Conserved water will be available for use by local communities, or for sale in water market transactions.
- Improvements in irrigation management that reduce nonpoint source pollution entering streams, rivers and reservoirs can improve downstream water quality.
- Voluntary **land retirement** programs will increase supply reliability for other local water users. Water from retired lands will remain within the district.
- Agricultural drainage controls will improve local water quality.
- Implementing BMPs for pesticides use will improve water quality.
- Minimize drought year shortages.

San Joaquin River and South San Joaquin Valley

Goals

Primary goals for water management and ecosystem restoration in the San Joaquin River and South San Joaquin Valley region include:

- Improve in-stream flows, water quality, and habitat in the San Joaquin River and tributaries;
- Improve groundwater recharge, and reliability of water supply to agriculture and refuges;
- Provide exchanges and transfers that promote water quality and overcome drought crises.

Strategy

Key measures CALFED agencies will pursue in the San Joaquin Valley strategy include:

- Reestablishing San Joaquin flows through storage management.
- Increasing locally controlled groundwater storage.
- Restoring habitat in the San Joaquin River and its tributaries while emphasizing flood protection.
- Studying additional storage projects such as Friant Dam enlargement (or equivalent).
- Facilitating water quality exchanges and similar programs

NOTE: Actions not analyzed in the programmatic EIS/EIR will require both project-specific and possibly additional programmatic analysis before they can be implemented.

San Joaquin Valley Benefits

Principal benefits to the San Joaquin Valley include:

- Responsible water transfers will be facilitated and water supply reliability will benefit through streamlined application process and better information about conveyance opportunities.
- Water transfer application information will help prevent negative third-party impacts.
- Increased locally-controlled groundwater storage will improve water supply reliability and flexibility.
- Through recovery of endangered species in the Bay-Delta system, water supplies can move more efficiently and reliably through the system.

- Funding and technical assistance to agricultural users to help them implement more efficient water management practices will help these users improve water supply reliability. Conserved water will be available for use by local communities, or for sale in water market transactions.
- Watershed programs above the Delta that manage nonpoint source pollution and reduce pollutants entering streams, rivers and reservoirs will improve downstream water quality.
- Agricultural drainage controls can improve local water quality.
- Implementing BMPs for pesticides use will improve water quality.
- Improved flood management from implementation of the Sacramento and San Joaquin River Basins Comprehensive Study.

Southern California

Goals

Primary goals for water management in Southern California include:

- Improve the quality of imported water supplies;
- Develop water treatment technologies;
- Increase water supply and reliability.

Strategy

Key measures CALFED agencies will pursue in the Southern California strategy include:

- Promoting and expanding water use efficiency programs, including reuse and recycling programs.
- Supporting development of new water treatment technologies for municipal uses.
- Implementing water quality programs to improve Bay-Delta water quality.
- Streamlining water transfer processes.
- Facilitating water quality exchanges and similar programs.
- Developing drought contingency plan.

NOTE: Actions not analyzed in the programmatic EIS/EIR will require both project-specific and possibly additional programmatic analysis before they can be implemented.

Southern California Benefits

Principal benefits to Southern California include:

- Improved water transfer process will benefit water supply reliability.
- Recovery of endangered species in the Bay-Delta system will reduce the conflict between fisheries and water suppliers.
- Support for urban water use efficiency programs will improve the availability of water supply. Demonstrable water use efficiency is essential to the approval of additional surface water storage projects.
- Improving and maintaining Delta levees will protect water quality and supply.
- Watershed programs above the Delta that manage nonpoint source pollution and reduce pollutants entering streams, rivers and reservoirs can improve downstream water quality, reduce treatment costs, and increase water recycling opportunities.
- Improved operation of the Delta Cross Channel, and/or construction of a through Delta Sacramento River diversion, will improve drinking water quality.
- Conveyance improvements in the Delta, such as channel enlargements, fish screens and dredging, will improve water supply reliability.
- Storage facilities north and south of the Delta can be managed to improve water quality and water supply reliability, and could provide additional supply.
- Improved decision-making process for operations will provide water quality and water supply reliability improvements.
- Controlling salinity in the Delta will improve water quality and utility.
- Minimize drought year shortages.

Agency Actions Related to CALFED

While the CALFED Program is an ambitious, long-term plan, it does not include all of the resource management activities of the CALFED agencies. Each State and Federal agency has responsibilities and authorities that are outside of, but complementary to the CALFED Program. These actions will help achieve CALFED goals and objectives. CALFED was designed to complement and supplement existing actions and programs.

CALFED agencies will also develop new actions outside the CALFED Program that are not covered by the CALFED final programmatic environmental documentation.

The following are some of the CALFED agency programs that work with CALFED Program actions for greater statewide benefits.

- **U.S. Army Corps of Engineers and California State Reclamation Board Comprehensive Study of Sacramento and San Joaquin River Basin Flood Management** - Actions will be recommended to improve flood management and integrate ecosystem restoration in the Sacramento and San Joaquin River basins. Such actions will be coordinated with CALFED's Ecosystem Restoration Program.
- **Central Valley Project Improvement Act (CVPIA) provisions** - to restore anadromous fish populations, improve and facilitate water transfers, implement water conservation actions, provide water for wildlife refuges in the Central Valley, and improve flows on the Trinity River for anadromous fish - parallel many elements of the CALFED Program. For example, **Anadromous Fish Restoration Program (AFRP)** flow improvement targets are incorporated into the CALFED Ecosystem Restoration Program (ERP), and the AFRP and ERP will coordinate water acquisitions.
- **Facilitation of water transfers** - A potential barrier to water transfers is the lack of incentive for some individual landowners to implement water conservation practices because the saved water frequently goes to the irrigation district or water supply agency, not to the landowner. The Bureau of Reclamation, State Water Resources Control Board, and Department of Water Resources will develop and support proposals that work within California's existing system of water rights to remove these disincentives.
- **San Luis Bypass** - A bypass canal at the San Luis Reservoir would allow Santa Clara Valley Water District, which serves "the Silicon Valley," to receive water directly from Delta pumping facilities, thereby avoiding water quality problems associated with low water levels in San Luis Reservoir.
- **Bay Area Blending/Exchange Program** - Water supply agencies in the Bay Area have different water sources and different water supply and water quality concerns.

A regional approach to water supply operations could enable Bay Area water districts to work cooperatively to address water quality and supply reliability issues.

- **Land Retirement** - Voluntary land retirement programs in the Westside San Joaquin Valley carried out by the Bureau of Reclamation as part of CVPIA could benefit water quality and supply reliability.
- **Regional Exchanges** - Water exchange agreements could make high quality Sierra water in the eastern San Joaquin Valley available to urban Southern California. This would provide water quality benefits to urban areas and improved water supply reliability for agricultural areas.

Getting More Information

Information on CALFED is available from several sources. The CALFED web site provides current information, background, and several Program documents, including the Final Programmatic EIS/EIR. The website address is <http://calfed.ca.gov>.

In July 2000, CALFED released a Final Programmatic EIS/EIR that includes a main environmental document and many appendices that describe program elements and other program features. The following volumes are available free of charge:

- Compact disc containing all volumes of the Final Programmatic EIS/EIR. Software required to view the documents is free and included with instructions on the CD.
- Final EIS/EIR Main Document (Impact Analysis) - 1,200 pages
- Executive Summary of EIS/EIR Main Document - 40 pages
- Phase II Report - 200 pages (a more detailed version of this Program Summary)
- Implementation Plan - 190 pages
- Ecosystem Restoration Program Plan - 1,200 pages, four volumes
- Levee System Integrity Program Plan - 500 pages
- Water Quality Program Plan - 300 pages
- Water Use Efficiency Program Plan - 190 pages
- Water Transfer Program Plan - 100 pages
- Watershed Program Plan - 100 pages
- Multi-species Conservation Strategy - 500 pages
- Comprehensive Monitoring Assessment & Research Program Report - 150 pages
- Response to Comments (3 Volumes) - 1,500 pages

Glossary

Acre-foot (AF) Volume of water that would cover 1 acre to a depth of 1 foot, or 325,851 gallons of water. On average, could supply one-two households with water for a year. A flow of 1 cubic foot per second for a day is approximately 2 AF.

Action A structure, operating criteria, program, regulation, policy, or restoration activity that is intended to address a problem or resolve a conflict in the Bay-Delta system.

Alternative A collection of actions or action categories assembled to provide a comprehensive solution to problems in the Bay-Delta system.

Anadromous Fish Fish that spend a part of their life cycle in the sea and return to freshwater streams to spawn.

Anadromous Fish Restoration Program (AFRP) Part of the Central Valley Project Improvement Act. The AFRP identified instream and Delta flows needed for recovery of anadromous fish.

Banks Pumping Plant State Water Project (SWP) export pumping plant in the south Delta. The plant is located downstream of Clifton Court Forebay (see below).

Bay-Delta Advisory Council (BDAC) 34-member federally chartered citizens' advisory committee. BDAC provides formal comment and advice to the CALFED agencies during regularly scheduled public meetings.

Best Management Practices(BMP) An urban water conservation measure that the California Urban Water Conservation Council agrees to implement among member agencies. The term is also used in reference to water quality standards, watershed management activities, and others.

Carriage Water Additional flows released during export periods to ensure maintenance of water quality standards and assist with maintaining natural outflow patterns in Delta channels. For instance, a portion of transfer water released from upstream of the Delta intended for export from south Delta would be used for Delta outflow.

Central Valley Project (CVP) Federally operated water management and conveyance system that provides water to agricultural, urban and industrial users in California. The CVP was originally authorized by legislation in 1937.

Central Valley Project Improvement Act (CVPIA) Federal legislation, signed into law on October 30, 1992. Mandates major changes in the management of the federal Central

Valley Project. The CVPIA puts fish and wildlife on an equal footing with agricultural, municipal, industrial and hydropower users.

Clifton Court Forebay In-Delta storage used to regulate flows to the Banks Pumping Plant.

Conceptual Model An explicit description of the critical cause-and-effect pathways in ecosystem function. A conceptual model includes a summary of current knowledge and hypotheses about ecosystem structure and function, and highlights key uncertainties where research might be necessary.

Conjunctive Use The operation of a groundwater basin in combination with a surface water storage and conveyance system. Water is stored in the groundwater basin for later use in place of or to supplement surface supplies. Water is stored by intentionally recharging the basin during years of above-average water supply.

Conveyance A pipeline, canal, natural channel or other similar facility that transports water from one location to another.

Delta Inflow The combined water flow entering the Delta at a given time from the Sacramento River, San Joaquin River and other tributaries.

Delta Islands Islands in the Sacramento-San Joaquin Delta protected by levees. Delta islands provide space for numerous functions, including agriculture, communities and important infrastructure such as transmission lines, pipelines and roadways.

Delta Outflow The net amount of water (not including tidal flows) at a given time flowing out of the Delta towards the San Francisco Bay. The Delta outflow equals **Delta inflow** minus the water used within the Delta and the exports from the Delta.

Diversions The action of taking water out of a river system or changing the flow of water in a system for use in another location.

Drought Conditions A time when rainfall and runoff are much less than average. One method to categorize annual rainfall is as follows, with the last two categories being drought conditions: wet, above normal, below normal, dry, critical.

Ecosystem A recognizable, relatively homogeneous unit that includes organisms, their environment and all the interactions among them.

Endangered Species Act (ESA) Federal (FESA) and State (CESA) legislation that provides protection for species that are in danger of extinction.

Environmental Water Account (EWA) A method of accounting for the water and financial assets that can be managed to provide additional protections for fishery resources beyond prescriptive standards.

Exotic Species Also called introduced species or non-native species; refers to plants and animals that originate elsewhere and are brought into a new area, where they may dominate the local species or in some way negatively impact the environment for native species.

Export Water Diversion from the Delta used for purposes outside the Delta.

Fish Screens Physical structures placed at water diversion facilities to keep fish from getting pulled into the facility and dying there.

Flexible Operations Operation of the south Delta export pumps that would allow reducing export pumping at times critical to fish and increasing export pumping at other times. Flexible operations would allow higher or lower export rates and export-inflow ratios than prescribed by the 1995 Water Quality Control Plan. Pumping could deviate from currently permitted rates seasonally and on a real-time basis in response to Delta flows and fish distributions.

Framework for Action "California's Water Future: A Framework for Action" is an action plan to restore health to the Bay-Delta ecosystem, improve water quality; enhance water supply reliability; assure long-term stability for agricultural, urban and environmental uses, and provide long-term protection of Delta levees. The plan integrates actions from several state, federal and regional water management and ecosystem restoration efforts, including CALFED. It was released by California Governor Gray Davis and U.S. Interior Secretary Bruce Babbitt June 2000.

Groundwater Banking Storing water in the ground for use to meet demand during dry years. In-lieu groundwater banking replaces groundwater used by users with surface water to build up and save underground water supply for use during drought conditions.

In-Delta Storage Water storage within the Delta by converting an existing island to a reservoir. The storage can help facilitate flexible operations of the export pumps by allowing export of stored water when critical fish species are present in the south Delta.

Joint Point of Diversion(JPOD) Combined use of the SWP and CVP Delta export facilities to supply water to customers of either project. JPOD requires a change in water right permits issued to the projects by the State Water Resources Control Board because each permit specifies a point of diversion.

Land Fallowing/Retirement Allowing previously irrigated agricultural land to temporarily lie idle (fallowing) or purchasing such land and allowing it to remain out of production for a variety of purposes for a long period of time.

Old River A natural channel in the southern Delta. The channel merges with many others in the south Delta, passes by the south Delta export facilities and connects with the San Joaquin River at its upstream end. Much of the water approaching the export facilities flows up Old River from the central Delta. Potential improvements to the channel include a fish barrier at its upstream end to keep migrating fish in the San Joaquin River and dredging north of Clifton Court Forebay to allow more efficient flow to the export facilities.

Real-Time Monitoring and Operations Continuous observation in multiple locations of biological conditions on site in order to improve management to protect fish species and allow optimal operation of the water supply system. This is an essential feature to allow flexible operations of the export pumps.

Setback Levee A constructed embankment to prevent flooding that is positioned some distance from the edge of the river or channel. Setback levees allow wildlife habitat to develop between the levee and the river or stream.

South of Delta Storage Water storage supplied with water exported south from the Delta.

State Water Project (SWP) California State water storage and conveyance system that pumps water from the Delta for agricultural, urban domestic, and industrial purposes. Authorized by legislation in 1951.

Terrestrial Species Types of species of animals and plants that live on or grow from the land.

Through-Delta Conveyance A means of improving conveyance across the Delta by a variety of modifications to Delta channels.

Tracy Pumping Plant CVP export pumping plant in the south Delta.

Upstream Storage Any water storage upstream of the Delta supplied by the Sacramento or San Joaquin rivers or their tributaries.

Water Conservation Those practices that encourage consumers to reduce the use of water. The extent to which these practices actually create a savings in water depends on the total or basin- wide use of water.

Water Recycling Practices that treat and reuse water. The wastewater is treated to meet health and safety standards depending on its intended use. Also called water reclamation.

Water Transfers Voluntary water transactions conducted under state law and in keeping with federal regulations.

Watershed An area that drains to a particular channel or river, usually bounded peripherally by a natural divide of some kind such as a hill, ridge, or mountain,